

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION PERMIT APPLICATION EVALUATION AND CALCULATIONS	PAGES 13	PAGE 1
	APPL NO 501741	DATE 12/30/2009
	PROCESSED BY AS08	CHECKED BY

TITLE V PERMIT (REV 2) EVALUATION

Applicant's Name Los Angeles County Sanitation Districts (LACSD)

Mailing Address 1955 Workman Mill Road
Whittier, CA 90601

Equipment Location 24501 South Figueroa Street
Carson, CA 90745

FACILITY ID 800236

APPLICATION 501741- Title V Significant Permit Revision

Equipment Description

APPLICATION 479877

PLASMA ARC CUTTER WITH POWER SUPPLY, MILLER, MODEL SPECTRUM 1251, 19 - 55 AMPERE INPUT, 208 - 575 VDC OUTPUT.

APPLICATION 479878

PLASMA ARC CUTTER WITH POWER SUPPLY, MILLER, MODEL SPECTRUM 1251, 19 - 55 AMPERE INPUT, 208 - 575 VDC OUTPUT.

APPLICATION 479879

PLASMA ARC CUTTER WITH POWER SUPPLY, MILLER, MODEL SPECTRUM 2050, 8 - 21 AMPERE INPUT, 208 - 575 VDC OUTPUT.

APPLICATION 479880

PLASMA ARC CUTTER WITH POWER SUPPLY, MILLER, MODEL SPECTRUM 2050, 8 - 21 AMPERE INPUT, 208 - 575 VDC OUTPUT.

APPLICATION 497322

INTERNAL COMBUSTION ENGINE, CUMMINS, MODEL NO. QSL9-G3, SIPS STANDBY GENERATOR 6A2, DIESEL FUELED, 6-CYLINDER, TURBOCHARGED AND AFTERCOOLED, 399 BHP, DRIVING AN EMERGENCY ELECTRICAL GENERATOR.

APPLICATION 497323

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION PERMIT APPLICATION EVALUATION AND CALCULATIONS	PAGES 13	PAGE 2
	APPL NO 501741	DATE 12/30/2009
	PROCESSED BY AS08	CHECKED BY

INTERNAL COMBUSTION ENGINE, CUMMINS, MODEL NO. QSL9-G3, SIPS STANDBY GENERATOR 6A2A, DIESEL FUELED, 6-CYLINDER, TURBOCHARGED AND AFTERCOOLED, 399 BHP, DRIVING AN EMERGENCY ELECTRICAL GENERATOR.

APPLICATION 497787

INTERNAL COMBUSTION ENGINE, CUMMINS, MODEL NO. QSL9-G3, DIESEL FUELED, 6-CYLINDER, TURBOCHARGED AND AFTERCOOLED, 755 BHP, DRIVING AN EMERGENCY ELECTRICAL GENERATOR.

Background/Process Description

Los Angeles County Sanitation Districts (LACSD) A/N 501741 was submitted for Title V permit revision (2) on August 21, 2009. The Title V permit revision includes seven permit applications. Four (4) applications (479877, 479878, 479879 and 479880) were submitted for equipment operating without a permit for plasma arc cutters. Three (3) applications (497322, 497323 and 497787) were submitted for permits to construct and operate for stationary emergency, diesel fueled compression ignition IC engines for electrical generation. The proposed equipment will be located at Los Angeles County Sanitation Districts – Joint Water Pollution Control Plant (LACSD-JWPCP) in Carson.

A/Ns 479877, 479878, 479879 and 479880 were submitted on March 21, 2008 as Equipment Operating without a Permit (PO no PC) application for four site specific plasma arc cutting systems. Higher fees shall apply to this type of application. The equipment is used to make short cuts in metal (primarily stainless steel) when fabricating miscellaneous items. The system consists of a plasma arc cutter. The plasma arc process uses a high velocity ionized gas (air in this case) to cut various alloys of carbon and stainless steel. The plasma jet melts and blows out the metal in the cut generating metal fumes that contain alloy elements. Stainless steel alloys have high chromium and nickel content and the cutting fumes must be evaluated for risk under Rule 1401. The chromium and nickel content of carbon steel is much lower but the cutting fumes still require risk evaluation. The cuts are performed inside the east and west weld shop/maintenance building and outside within the facility. The equipment will operate a maximum of 12 hours per year (1 hr/day, 1 day/week, 12 weeks/year).

A/Ns 497322 and 497323 are identical pieces of equipment (IC engines) submitted on March 26, 2009 and A/N 497787 (IC engine) was submitted on April 10, 2009. Applications 497322 and 497323 engines (399 BHP) have a Certified Equipment Permit under A/N 461873 expiring on 12/31/2010. The engines are to be manufactured this year and are EPA/ CARB certified under the provisions of 40 CFR 89, Non-road Tier 3 compliant. Application 497787 engine (755 BHP) has a Certified Equipment Permit under A/N 455700 expiring on 12/31/2010. The engine is to be manufactured this year and is EPA / CARB certified under the provisions of 40 CFR 89, Non-road Tier 2 compliant. Please see email dated 9/04/09, indicating that it will take 8-9 weeks to

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION PERMIT APPLICATION EVALUATION AND CALCULATIONS	PAGES 13	PAGE 3
	APPL NO 501741	DATE 12/30/2009
	PROCESSED BY AS08	CHECKED BY

manufacture the units. The three engines will drive emergency electrical generators which will be used at LACSD-JWPCP. The operating period for maintenance and testing for the engines shall not exceed 4.2 hours in any one month (see Engineering & Compliance Memo dated March 2, 2000).

There is no school within 1000 feet of any of these emission sources. A Notice to Comply D25380 was issued on October 30, 2009 to monitor excavation as required by Section III of R1166 Plan #500428 and also sign Plan #500428. A Notice to Comply D13974 was issued on July 10, 2008 against the above facility for failure to provide the following records: 1) CARB Registration for four ICEs, 2) Digester gas suppliers contains greater than 40% H₂S, flow rate, heat input, source testing daily operating log (start and stop hours), and type and quantity of fuel, 3) Annual data and quarterly CGA, etc. There have been eight complaints filed against the above facility in the past year, all of which were regarding foul odors.

Title V revision 2, to include four plasma arc cutters and three emergency ICEs is considered a significant permit revision, cumulative emission increases of non-RECLAIM pollutants or HAPS due to these permit revisions do not exceed thresholds, listed under Draft Technical Guidance Document for Title V Program, Version 4.0, March 2005, Chapter 5, Table 5-4 (lbs/day VOC: 30, CO: 220, PM₁₀: 30 and HAP: 30). Although the installation of the three emergency ICEs is subject to a NSPS pursuant to 40 CFR Part 60 and a NESHAP pursuant to 40 CFR Part 63. Public notice is required. Title V Revision 01 (A/N 495038) was issued May 14, 2008.

Calculations for A/Ns 479877, 479878, 479879 & 479880

The calculations are based on the process information provided by the applicant and summarized in the assumptions listed below. Risk is calculated from the emissions using current AQMD Toxics Unit methods. The weight of steel melted and displaced is estimated from the dimensions of the cut. Nickel and chromium in the resulting fumes are quantified using emission factors derived from source testing similar processes. The emission rates are calculated from the listed assumptions. Two categories of steel, carbon steel (cs), and stainless steel (ss) are considered in the calculations below. MICR is calculated for each type of metal and an annual limit for each was determined. The maximum speed cut and maximum thickness cut is based on the maximum potential emissions from the cutting performance curve.

Assumptions

Process weight (PW)	= amount of material in cut
Stainless steel (ss)	= 15 wt% nickel, 20 wt% chromium, maximum
Carbon steel (cs)	= 0.37 wt% nickel, 0.07 wt% chromium, maximum
Operating time	= 1 hr/day, 1 day/week, 12 weeks/year
Max speed of cut (SOC)	= 130 inches per minute (for A/Ns 479877 and 479878)
Max speed of cut (SOC)	= 110 inches per minute (for A/Ns 479879 and 479880)
Max width of cut (WOC)	= 0.406 inch (cs), 0.375 inch (ss)

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION PERMIT APPLICATION EVALUATION AND CALCULATIONS	PAGES 13	PAGE 4
	APPL NO 501741	DATE 12/30/2009
	PROCESSED BY AS08	CHECKED BY

Max thickness of cut (TOC) = 0.3125 inch (for A/Ns 479877 and 479878)

Max thickness of cut (TOC) = 0.1875 inch (for A/Ns 479879 and 479880)

Steel density (P) = 0.29 lbs/cubic inch (ci)

Emission Factors

Emission Factors and equations based on A/N 184446 by Marco Polo 5/1/91. Also see A/N 398253 for reference for calculations.

PM = 0.12 (PW)

R1 (Cr) = 0.33 (PW x wt%Cr)

R1 (Cr+6) = 0.00022 (PW x wt%Cr)

R1 (Ni) = PM x wt%Ni

PW (hourly) = SOC x WOC x TOC x P

PW (annual) = SOC x WOC x TOC x P x 12 hrs/year

The applicant also indicated that it was acceptable to limit the linear length of carbon steel and stainless steel cut in the permit conditions. The linear length of carbon steel and stainless steel cut shall be limited to 200 inches per year.

Emissions for Carbon Steel based for A/Ns 479877 & 479878

PW(annual → hourly)

= 200 in/year x 0.29 lbs/ci x 0.3125 in. x 0.406 in. x year/12hours

= 0.61 lbs/hr = 14.64 lbs/year

PM emissions

R1 = R2

R1 = 0.12 x 0.61 lbs/hr

= 0.07 lbs/hr = 0.84 lbs/year

R1(aver daily) = max monthly / 30 days/month

= 0.07 lbs/hr/week x 4weeks/month / 30 days/month

NSR = 0.009 lbs/day ~ 0.01 lbs/day

Nickel emissions

R1 = R2

R1 = 0.07 lb/hr x 0.0037

= 0.000259 lbs/hr = 0.000311 lbs/year

Hexavalent Chromium emissions

R1 = R2

R1 = 0.00022 x (0.61 lbs/hr x 0.0007)

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION PERMIT APPLICATION EVALUATION AND CALCULATIONS	PAGES 13	PAGE 5
	APPL NO 501741	DATE 12/30/2009
	PROCESSED BY AS08	CHECKED BY

$$= 9.39\text{E-}8 \text{ lbs/hr}$$

$$= 1.13\text{E-}6 \text{ lbs/year}$$

Emissions for Stainless Steel based for A/Ns 479877 & 479878

PW(annual → hourly)

$$200 \text{ in/year} \times 0.29 \text{ lbs/ci} \times 0.3125 \text{ in} \times 0.375 \text{ in} \times \text{year}/12\text{hr}$$

$$= 0.57 \text{ lbs/hr}$$

$$= 6.84 \text{ lbs/year}$$

PM emissions

R1 = R2

$$R1 = 0.12 \times 0.57 \text{ lbs/year}$$

$$= 0.07 \text{ lbs/hr} \quad = 0.84 \text{ lbs/year}$$

R1(aver daily) = max monthly / 30 days/month

$$= 0.07 \text{ lbs/hr/week} \times 4 \text{ weeks/month} / 30 \text{ days/month}$$

$$\text{NSR} = 0.009 \text{ lbs/day} \sim 0.01 \text{ lbs/day}$$

Nickel emissions

R1 = R2

$$R1 = 0.07 \text{ lbs/hr} \times 0.15$$

$$= 0.0105 \text{ lbs/hr} \quad = 0.126 \text{ lbs/year}$$

Hexavalent Chromium emissions

R1 = R2

$$R1 = 0.00022 \times (0.57 \text{ lbs/hr} \times 0.2)$$

$$= 2.51\text{E-}5 \text{ lbs/hr} \quad = 3.01\text{E-}4 \text{ lbs/year}$$

Emissions Summary for A/Ns 479877 & 479878

Emissions from carbon steel + Emissions from stainless steel

CONTAMINANT	LB/HR		LB/YEAR	
	R1	R2		R1
PM10	0.14	0.14	1.68	1.68
Nickel	0.0108	0.0108	0.130	0.130
Hexavalent Chromium	2.52E-5	2.52E-5	3.02E-4	3.02E-4

Toxic Risk Analysis for A/Ns 479877 & 479878

Operating Schedule:

1hr/day, 1day/week, 12 weeks/year

Source Type:

Point

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION PERMIT APPLICATION EVALUATION AND CALCULATIONS	PAGES 13	PAGE 6
	APPL NO 501741	DATE 12/30/2009
	PROCESSED BY AS08	CHECKED BY

Emission release height: 3 ft. (0.91 m) (assume workbench/table height)
Nearest Residential Receptor Distance: 973 ft. (297 m)
Nearest Commercial Receptor Distance: 906 ft. (276 m)

Compound	Control Efficiency	MW (lbs/lbmole)	Outlet emission (lbs/hr)
Nickel	N/A	58.71	0.0108
Chromium, hexavalent	N/A	51.996	2.52E-5

Tier II analysis was used since the nearest receptor is greater than 25 meters in distance from the emission source. Tier II risk analysis was based on the outlet emissions listed in the above table. The MICR values are determined to be 1.21×10^{-8} for residential and 1.25×10^{-8} for commercial receptors. HIA and HIC were less than 1. Cancer Burden was less than 0.5.

Emissions for Carbon Steel based for A/Ns 479879 & 479880

PW(annual → hourly)

$$= 200 \text{ in/year} \times 0.29 \text{ lbs/ci} \times 0.1875 \text{ in} \times 0.406 \text{ in} \times \text{year}/12\text{hours}$$

$$= 0.37 \text{ lbs/hr} \quad \quad \quad = 8.88 \text{ lbs/year}$$

PM emissions

R1 = R2

$$R1 = 0.12 \times 0.37 \text{ lbs/hr}$$

$$= 0.04 \text{ lbs/hr} \quad \quad \quad = 0.96 \text{ lbs/year}$$

$$R1(\text{aver daily}) = \text{max monthly} / 30 \text{ days/month}$$

$$= 0.04 \text{ lbs/hr/week} \times 4\text{weeks/month} / 30 \text{ days/month}$$

$$NSR = 0.005 \text{ lbs/day} \sim 0.01 \text{ lbs/day}$$

Nickel emissions

R1 = R2

$$R1 = 0.04 \text{ lb/hr} \times 0.0037$$

$$= 0.000148 \text{ lbs/hr} \quad \quad \quad = 0.00355 \text{ lbs/year}$$

Hexavalent Chromium emissions

R1 = R2

$$R1 = 0.00022 \times (0.37 \text{ lbs/hr} \times 0.0007)$$

$$= 5.70\text{E-}8 \text{ lbs/hr} \quad \quad \quad = 1.37\text{E-}6 \text{ lbs/year}$$

Emissions for Stainless Steel based for A/Ns 479879 & 479880

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION PERMIT APPLICATION EVALUATION AND CALCULATIONS	PAGES 13	PAGE 7
	APPL NO 501741	DATE 12/30/2009
	PROCESSED BY AS08	CHECKED BY

PW(annual → hourly)

$$\begin{aligned}
 &200 \text{ in/year} \times 0.29 \text{ lbs/ci} \times 0.1875 \text{ in} \times 0.375 \text{ in} \times \text{year}/12\text{hr} \\
 &= 0.34 \text{ lbs/hr} \qquad \qquad \qquad = 4.08 \text{ lbs/year}
 \end{aligned}$$

PM emissions

$$R1 = R2$$

$$\begin{aligned}
 R1 &= 0.12 \times 0.34 \text{ lbs/year} \\
 &= 0.04 \text{ lbs/hr} \qquad \qquad \qquad = 0.96 \text{ lbs/year}
 \end{aligned}$$

$$\begin{aligned}
 R1(\text{aver daily}) &= \text{max monthly} / 30 \text{ days/month} \\
 &= 0.04 \text{ lbs/hr/week} \times 4 \text{ weeks/month} / 30 \text{ days/month}
 \end{aligned}$$

$$NSR = 0.005 \text{ lbs/day} \sim 0.01 \text{ lbs/day}$$

Nickel emissions

$$R1 = R2$$

$$\begin{aligned}
 R1 &= 0.04 \text{ lbs/hr} \times 0.15 \\
 &= 0.006 \text{ lbs/hr} \qquad \qquad \qquad = 0.072 \text{ lbs/year}
 \end{aligned}$$

Hexavalent Chromium emissions

$$R1 = R2$$

$$\begin{aligned}
 R1 &= 0.00022 \times (0.34 \text{ lbs/hr} \times 0.2) \\
 &= 1.50\text{E-}5 \text{ lbs/hr} \qquad \qquad \qquad = 0.00018 \text{ lbs/year}
 \end{aligned}$$

Emissions Summary for A/Ns 479879 & 479880

Emissions from carbon steel + Emissions from stainless steel

CONTAMINANT	LB/HR		LB/YEAR	
	R1	R2		R1
PM10	0.08	0.08	0.96	0.96
Nickel	0.00615	0.00615	0.074	0.074
Hexavalent Chromium	1.51E-5	1.51E-5	1.81E-4	1.81E-4

Toxic Risk Analysis for A/Ns 479879 & 479880

Operating Schedule:	1hr/day, 1day/week, 12 weeks/year
Source Type:	Point
Emission release height:	3 ft. (0.91 m) (assume workbench/table height)
Nearest Residential Receptor Distance:	973 ft. (297 m)
Nearest Commercial Receptor Distance:	906 ft. (276 m)

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION PERMIT APPLICATION EVALUATION AND CALCULATIONS	PAGES 13	PAGE 8
	APPL NO 501741	DATE 12/30/2009
	PROCESSED BY AS08	CHECKED BY

Compound	Control Efficiency	MW (lbs/lbmole)	Outlet emission (lbs/hr)
Nickel	N/A	58.71	0.00615
Chromium, hexavalent	N/A	51.996	1.51E-5

Tier II analysis was used since the nearest receptor is greater than 25 meters in distance from the emission source. Tier II risk analysis was based on the outlet emissions listed in the above table. The MICR values are determined to be 7.09×10^{-9} for residential and 7.32×10^{-9} for commercial receptors. HIA and HIC were less than 1. Cancer Burden was less than 0.5.

Calculations for A/Ns 497322 & 497323

See Excel spreadsheet evaluation attached.

Emissions are based on operating schedule of 50 hours per year, 4.2 hours per month.

Emission Summary: (399 BHP)

	RHC	NO _x	SO _x	CO	PM	PM ₁₀
E.F. (g/bhp-hr)	0.17	2.74	0.0049*	2.31	0.12	0.12
Emission (lbs/hr)	0.15	2.41	0.004	2.03	0.106	0.101
Emission (lbs/year)	7.48	120.51	0.22	101.60	5.28	5.07
30-day average (lbs/day)	0.02	0.34	0.0006	0.28	0.01	0.01

* E.F. based on 15 ppmv S in diesel fuel.

30-day average (lbs/day) = Emission (lbs/hr) x max hours per month / 30 days

Calculations for A/N 497787

See Excel spreadsheet evaluation attached.

Emissions are based on operating schedule of 50 hours per year, 4.2 hours per month.

Emission Summary: (755 BHP)

	RHC	NO _x	SO _x	CO	PM	PM ₁₀
E.F. (g/bhp-hr)	0.11	4.59	0.0049*	0.45	0.075	0.072
Emission (lbs/hr)	0.18	7.64	0.008	0.75	0.125	0.120
Emission (lbs/year)	9.92	414.08	0.44	40.60	6.77	6.50
30-day average	0.03	1.07	0.001	0.10	0.02	0.02

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION PERMIT APPLICATION EVALUATION AND CALCULATIONS	PAGES 13	PAGE 9
	APPL NO 501741	DATE 12/30/2009
	PROCESSED BY AS08	CHECKED BY

(lbs/day)						
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* E.F. based on 15 ppmv S in diesel fuel.

30-day average (lbs/day) = Emission (lbs/hr) x max hours per month / 30 days

Facility totals (based on NSR lbs/day values)

A/N 479877 (plasma arc cutter)

CO	= 0 lbs/hr	= 0 lbs/day	= 0 lbs/year	= 0 tons/year
NOx	= 0 lbs/hr	= 0 lbs/day	= 0 lbs/year	= 0 tons/year
PM10	= 0.14 lbs/hr	= 0.02 lbs/day	= 1.68 lbs/year	= 0.00 tons/year
ROG	= 0 lbs/hr	= 0 lbs/day	= 0 lbs/year	= 0 tons/year
SOx	= 0 lbs/hr	= 0 lbs/day	= 0 lbs/year	= 0 tons/year

A/N 479878 (plasma arc cutter)

CO	= 0 lbs/hr	= 0 lbs/day	= 0 lbs/year	= 0 tons/year
NOx	= 0 lbs/hr	= 0 lbs/day	= 0 lbs/year	= 0 tons/year
PM10	= 0.14 lbs/hr	= 0.02 lbs/day	= 1.68 lbs/year	= 0.00 tons/year
ROG	= 0 lbs/hr	= 0 lbs/day	= 0 lbs/year	= 0 tons/year
SOx	= 0 lbs/hr	= 0 lbs/day	= 0 lbs/year	= 0 tons/year

A/N 479879 (plasma arc cutter)

CO	= 0 lbs/hr	= 0 lbs/day	= 0 lbs/year	= 0 tons/year
NOx	= 0 lbs/hr	= 0 lbs/day	= 0 lbs/year	= 0 tons/year
PM10	= 0.08 lbs/hr	= 0.01 lbs/day	= 0.96 lbs/year	= 0.00 tons/year
ROG	= 0 lbs/hr	= 0 lbs/day	= 0 lbs/year	= 0 tons/year
SOx	= 0 lbs/hr	= 0 lbs/day	= 0 lbs/year	= 0 tons/year

A/N 479880 (plasma arc cutter)

CO	= 0 lbs/hr	= 0 lbs/day	= 0 lbs/year	= 0 tons/year
NOx	= 0 lbs/hr	= 0 lbs/day	= 0 lbs/year	= 0 tons/year
PM10	= 0.08 lbs/hr	= 0.01 lbs/day	= 0.96 lbs/year	= 0.00 tons/year
ROG	= 0 lbs/hr	= 0 lbs/day	= 0 lbs/year	= 0 tons/year
SOx	= 0 lbs/hr	= 0 lbs/day	= 0 lbs/year	= 0 tons/year

A/N 497322 (399 BHP ICE)

CO	= 2.03 lbs/hr	= 0.29 lbs/day	= 101.50 lbs/year	= 0.05 tons/year
NOx	= 2.41 lbs/hr	= 0.35 lbs/day	= 120.50 lbs/year	= 0.06 tons/year
PM10	= 0.10 lbs/hr	= 0.01 lbs/day	= 5.00 lbs/year	= 0.003 tons/year
ROG	= 0.15 lbs/hr	= 0.02 lbs/day	= 7.50 lbs/year	= 0.004 tons/year
SOx	= 0 lbs/hr	= 0 lbs/day	= 0 lbs/year	= 0 tons/year

A/N 497323 (399 BHP ICE)

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION PERMIT APPLICATION EVALUATION AND CALCULATIONS	PAGES 13	PAGE 10
	APPL NO 501741	DATE 12/30/2009
	PROCESSED BY AS08	CHECKED BY

CO	= 2.03 lbs/hr	= 0.29 lbs/day	= 101.50 lbs/year	= 0.05 tons/year
NOx	= 2.41 lbs/hr	= 0.35 lbs/day	= 120.50 lbs/year	= 0.06 tons/year
PM10	= 0.10 lbs/hr	= 0.01 lbs/day	= 5.00 lbs/year	= 0.003 tons/year
ROG	= 0.15 lbs/hr	= 0.02 lbs/day	= 7.50 lbs/year	= 0.004 tons/year
SOx	= 0 lbs/hr	= 0 lbs/day	= 0 lbs/year	= 0 tons/year

A/N 497787 (755 BHP ICE)

CO	= 0.75 lbs/hr	= 0.11 lbs/day	= 37.50 lbs/year	= 0.02 tons/year
NOx	= 7.64 lbs/hr	= 1.11 lbs/day	= 382.00 lbs/year	= 0.19 tons/year
PM10	= 0.12 lbs/hr	= 0.02 lbs/day	= 6.00 lbs/year	= 0.003 tons/year
ROG	= 0.18 lbs/hr	= 0.03 lbs/day	= 9.00 lbs/year	= 0.005 tons/year
SOx	= 0 lbs/hr	= 0 lbs/day	= 0 lbs/year	= 0.000 tons/year

Facility Total (all applications)

CO	= 4.81 lbs/hr	= 0.69 lbs/day	= 240.50 lbs/year	= 0.12 tons/year
NOx	= 12.46 lbs/hr	= 1.81 lbs/day	= 623.00 lbs/year	= 0.31 tons/year
PM10	= 0.76 lbs/hr	= 0.10 lbs/day	= 21.28 lbs/year	= 0.01 tons/year
ROG	= 0.48 lbs/hr	= 0.07 lbs/day	= 24.00 lbs/year	= 0.01 tons/year
SOx	= 0 lbs/hr	= 0 lbs/day	= 0 lbs/year	= 0 tons/year

Rules Evaluation

Rule 212: Rule 212 (c)(1)- There is no school within 1000 feet of the facility.
Rule 212 (c)(2)- On-site emission increases do not exceed the following:

Volatile Organic Compounds	30 lbs/day
Nitrogen Oxides	40 lbs/day
PM10	30 lbs/day
Sulfur Dioxide	60 lbs/day
Carbon Monoxide	220 lbs/day
Lead	3 lbs/day

Rule 212 (c)(3)(A)- MICR is not calculated for the three engines, since no carcinogenic Rule 1401 compounds have been identified. Furthermore the three engines are exempt from Rule 1401(d) requirements as listed in Rule 1401(g)(1)(F).
Rule 212 (c)(3)(A)(i)- MICR is below 1 in a million for the four plasma arc cutters.
Public Notice is not required.

Rule 401: Visible Emissions
No violations are expected, limits are listed under Rule 401(b)(1).

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION PERMIT APPLICATION EVALUATION AND CALCULATIONS	PAGES 13	PAGE 11
	APPL NO 501741	DATE 12/30/2009
	PROCESSED BY AS08	CHECKED BY

Rule 402: Nuisance
Nuisance is not expected.

Rule 404: Particulate Matter
No violations are expected limits are listed under Rule 404 Table 404(a).

Rule 407: Liquid and Gaseous Air Contaminants
Rule 407(a)- Equipment is exempt under Rule 407(b)(1).

Rule 431.2: Sulfur Content in Liquid Fuels
Rule 431.2(e)(2)-On or after June 1, 2004, the operator shall not purchase any diesel fuel for this equipment, unless the fuel is low sulfur for which the sulfur content shall not exceed 15 ppm (0.0015%) by weight as supplied by the supplier. Compliance is expected.

Rule 53A: Los Angeles County – Specific Contaminants (more stringent than Rule 53).
(Contained in Addendum to Reg IV)
Rule 53(a)- Sulfur compound emission, as SO₂ 500 ppmv. Compliance can be expected based on other similar category emergency ICE permits issued in SCAQMD.
Rule 53(b)- Combustion contaminants 0.1 gr/cf at 12% CO₂. Compliance can be expected based on other similar category emergency ICE permits issued in SCAQMD.

Reg IX: Standards of Performance for New Stationary Sources
Part 60, Chapter I, Title 40 of Code of Federal Regulations, Subpart IIII-
Standards of Performance for Stationary Compression Ignition Internal
Combustion Engines
60.4200-Applicability
This engine is applicable to the above Regulation
60.4200 (a)(2)(i)- The engine was/is manufactured after April 1, 2006 and is not a fire pump engine. Engine manufacture date: to be 2009.
60.4205(b)- The engine must comply with the emission standards of new nonroad CI engines in 60.4202, for the same model year and maximum engine power.
60.4207(a)-Diesel fuel must meet 40 CFR 80.510(a).
60.4209(a)-Non-resettable hour meter shall be installed per permit conditions.
60.4211(c)- Engine is certified to emissions standards.

Reg IX: Part 63, Chapter I, Title 40 of Code of Federal Regulations, Subpart ZZZZ-
National Emissions Standards for Hazardous Air Pollutants for Stationary
Reciprocating Internal Combustion Engines
63.6585- Applicability: Not applicable, if subject to NSPS or NESHAP.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION PERMIT APPLICATION EVALUATION AND CALCULATIONS	PAGES 13	PAGE 12
	APPL NO 501741	DATE 12/30/2009
	PROCESSED BY AS08	CHECKED BY

63.6590(c)- An affected source that is a new or reconstructed stationary RICE located at an area source... must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII. No further requirements apply for such engines

Rule 1110.2: Emissions From Gaseous- and Liquid-Fueled Engines

Rule 110.2(d)- Equipment is exempt under Rule 1110.2(h)(2).

Reg. XIII: Rule 1303(a)(1)- Equipment must be constructed with BACT for the three engines. BACT is not required for the four plasma cutters, since emission increases are less than one pound per day.

Rule 1303(a)(2)- The proposed engines are EPA / CARB certified Tier 2 and Tier 3 and manufactured on a date TBD (2009-2010). They are considered as BACT. Compliance is expected.

Rule 1303(b)(1)- Modeling for VOC and SO_x is not required (1303 Appendix A). NO_x, CO and PM₁₀ are less than the allowable emissions in Table A-1, no further analysis is required (1301 Appendix A). Furthermore, modeling is not required for the engines, emergency equipment is exempt from modeling under Rule 1304(a)(4).

Rule 1303(b)(2)- Offsets are not required; emergency equipment is exempt from offsets under Rule 1304(a)(4). Offsets are required for the plasma arc cutters, since the facility's potential to emit is greater than 4 tons. The facility is an essential public service.

Rule 1401: Toxic Air Contaminants

Rule 1401(d)- Engines are exempt under Rule 1401(g)(1)(F).

Rule 1401(d)(1)(A)- MICR less than 1.0×10^{-6} limit.

Rule 1401(d)(1)(C)- Cancer burden is less than 0.5.

Rule 1401(d)(2) and Rule 1401(d)(3)- HIC and HIA values are estimated to be less than 1 respectively.

Rule 1401.1: Rule 1401.1(b)- Equipment is exempt since it is located at an existing facility.

Rule 1401.1(i)(A)- Engines are exempt since it is an emergency internal combustion engine that is exempted under Rule 1304.

Rule 1401.1(i)(B)- Engines are exempt since they are subject to Rule 1470.

Rule 1470: Rule 1470(c)(1)- These engines shall use CARB diesel fuel (Diesel fuel No. 1-D or No. 2-D, pursuant to specifications in ASTM D975-81), that contains no more than 15 ppmv sulfur by weight.

Rule 1470(c)(2)(A)- This is considered a new engine per definition, installed after January 1, 2005. There are no schools located 500 feet or less from the engine.

Rule 1470(c)(2)(B)- Compliance is expected, see permit condition no. 5.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION PERMIT APPLICATION EVALUATION AND CALCULATIONS	PAGES 13	PAGE 13
	APPL NO 501741	DATE 12/30/2009
	PROCESSED BY AS08	CHECKED BY

Rule 1470(c)(2)(C)(i)- Total PM emission for this CARB certified engine is based on E.F. of 0.082 gm/bhp-hr. Engine shall operate no more than 50 hrs/yr for maintenance and testing purposes.

Rule 1470(c)(2)(C)(iv)- CI engines meet (399 BHP) Tier 3 and (755 BHP) Tier 2 standards appropriately. See emission summary table above.
Compliance can be expected.

Rule 1472: Rule 1472(d)(1)(A)- Each emergency diesel engine at the facility is greater than 150 meters from the nearest receptor.
Rule 1472(d)(1)(B)- Each emergency diesel engine emits diesel PM less than 0.15 g/bhp-hr.
Rule 1472(d)(1)(C)- There are no engine groups, since there are not three or more engines that are within 150 meters of one another.

Reg. XXX: Installation of the emergency IC engines and permitting of four plasma arc cutters is considered a Title V Significant permit revision under Rule 3000(b)(28) and will be subject to an EPA review (Rule 3003 (j)). A public notice is required. The installation of three emergency ICEs for electrical generation and permitting of four plasma arc cutters was considered a Significant revision since the proposed equipment (ICEs) are subject to an NSPS or NESHAP:
An EPA 45 day review and a public notice will be imposed.
Compliance is expected.

Conclusions and Recommendations

The equipment is in compliance with the Rules and Regulations of the AQMD. A Permit to Construct and Operate is recommended for applications 497322, 497323 and 497787. For Permit Conditions please see Sample Permit. A revised Title V permit is recommended after EPA review and the completion of public notice.